EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-01

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	Ambient Air Protocol
	Base X Option Period Number	

Contractor: BATTELLE MEMORIAL INSTITUTE

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 01/01/2013 To 12/31/2013

Comments:
Title: Ambient Air Protocol Gas Verification Program Data Base Enhancement. This WA includes 25 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 01/01/2013 To 12/31/2013		0
This Action:		25
Total:		25

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Michael Papp (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-2408 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

Contract Number: EP-D-13-005
Contractor: Battelle Memorial Institute
Work Assignment Number: 1-01
Work Assignment Manager: Mike Papp

STATEMENT OF WORK

I. TITLE: Ambient Air Protocol Gas Verification Program Data Base Enhancement

II. PROJECT BACKGROUND

The EPA Ambient Air Quality Monitoring Program's QA requirements 40 CFR Part 58, Appendix A require:

2.6 Gaseous and Flow Rate Audit Standards. Gaseous pollutant concentration standards (permeation devices or cylinders of compressed gas) used to obtain test concentrations for CO, SO_2, NO, and NO_2 must be traceable to either a National Institute of Standards and Technology (NIST) Traceable Reference Material (NTRM), NIST Standard Reference Materials (SRM) and Netherlands Measurement Institute (NMi) Primary Reference Materials (valid as covered by Joint Declaration of Equivalence) or a NIST-certified Gas Manufacturer's Internal Standard (GMIS), certified in accordance with one of the procedures given in reference 4 of this appendix. Vendors advertising certification with the procedures provided in reference 4 of this appendix and distributing gases as "EPA Protocol Gas" must participate in the EPA Protocol Gas Verification Program or not use "EPA" in any form of advertising.

These requirements give assurance to end users that all specialty gas producers selling EPA Protocol Gases are participants in a program that provides an independent assessment of the accuracy of their gases' certified concentrations.

In 2010 the Ambient Air Monitoring Program in the Office of Air Quality Planning and Standards (OAQPS) and Regions 2 and 7 started the implementation of the Ambient Air Protocol Gas Verification Program (AA-PGVP). Verifications started in June 2010.

In 2011, RTI under Contract EP-D- 08-047 assisted the AA-PGVP by developing the AA-PGVP survey and housing it on the RTI website where monitoring organizations can access and complete the survey. This WA will ensure continued support, maintenance and enhancement of the survey

III. STATEMENT OF WORK

This work assignment is to enhance the information management system for the AA-PGVP survey database.

Task 1. Work Plan and Cost Estimate

The contractor shall meet with the Work Assignment Manager (WAM) to discuss the work assignment tasks and deliverables. This meeting can be via teleconference. The contractor shall then prepare and submit a work assignment and cost estimate for this work assignment.

Task 2. Maintain and Enhance the AA-PGVP Survey to Provide for Website Submission

In a previous WA, RTI developed a web-based survey that provides information on what gas manufacturing production facilities are being used by the PQAO and it also lets EPA know what PQAOs would like to participate in the program. This task shall:

- Meet with EPA to discuss operation of website and explore any enhancements needed for 2013
- Review current website access guidance with EPA and revise if necessary.
- Maintain the current survey on the Website
- Assist individuals gain access to the website when access problems occur.
- Review the possibility of a "Help" button that includes common issues (like correct email address) and also goes to an email address where the person can send an email of their problem
- Ensure that PQAOs have updated the form each year by having certain required fields left unfilled (data base starts "new" Nov each year) until the POC submits this information.
- Send biweekly reminder messages out to those organizations not completing the survey. For FY 2013, we will include one EPA Regional Point of Contact to any reminder list that has a delinquent monitoring organization in a particular Region
- Enhance the survey to allow one regional point of contact to fill in a survey for a delinquent monitoring organization.
- Provide a "same as last year" field that would allow the POC to just click on this if the information is the same as the previous year.
- Provide two Excel reports every month: 1) the monitoring organizations that have filled out the survey and 2) a listing of delinquent monitoring organizations.

IV. DELIVERABLES

TABLE 1. List of Deliverable and Due Dates

Task	Deliverables	Due Date
1	Work Plan and Cost Estimate	In accordance with the terms of the contract.
2	Participant Survey Maintenance	9 months ongoing activities
2	Reports	2 months from WA approval

V. REPORTING REQUIREMENTS

The reporting requirements shall be in accordance with the terms and conditions in the contract.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-02

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	Transition for QA Activities
	Base X Option Period Number	

Contractor	Specify Section and paragraph of Contract SOW
BATTELLE MEMORIAL INSTITUTE	1, 3, 4 & 8

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 01/28/2013 To 12/31/2013

Comments:
Title: Transition Work Assignment for QA Activities. This change adds (4) tasks (see Attachment 1) to the Work Assignment. A revised cost estimate is due not later than 10 business days of the effective date of this change.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:	Cost/Fee:	LOE:
01/01/2013 To 12/31/2013		300
This Action:		0
Total:		300

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee:	LOE:
Cumulative Approved:	Cost/Fee:	LOE:

Work Assignment Manager Name: Dennis Crumpler (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-0871 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-02

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013 Base X Option Period Number	Transition for QA Activities

Contractor	Specify Section and paragraph of Contract SOW
BATTELLE MEMORIAL INSTITUTE	1, 3, 4 & 8

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 01/28/2013 To 12/31/2013

Comments:
Title: Transition Work Assignment for QA Activities. This WA includes 300 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period: 01/01/2013 To 12/31/2013	Cost/Fee:	LOE:
This Action:		300
Total:		300

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee:	LOE:
Cumulative Approved:	Cost/Fee:	LOE:

Work Assignment Manager Name: Dennis Crumpler (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-0871 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

Contract Number: EP-D-13-005
Work Assignment Number: 1-02

Battelle Memorial Institute
Work Assignment Manager: Dennis Crumpler

STATEMENT OF WORK

I. TITLE: Transition Work Assignment for QA Activities

II. PROJECT BACKGROUND

Several upcoming Work Assignments (WAs) under this contract will provide technical support for quality assurance programs that are prescribed by 40 CFR part 58 Appendix A for the national ambient air monitoring networks: The Ambient Monitoring Protocol Gas Verification Program (AA-PGVP), the PM2.5, PM10-2.5 and Lead (Pb) Performance Evaluation Programs (PEPs). Many of the support services to be provided are ongoing activities performed the previous contract with RTI (EP-D-08-047) and its predecessors. This WA is to transition the ongoing support activities, including all associated internet web facilities and data base program code(s) from RTI to Battelle.

The anticipated ongoing support activities under future WAs include:

- Development and maintenance of web facility that:
    - Provides a registration service for monitoring agencies to participate in the AA-PGVP. In the future Pb monitoring agencies will be able to order quality control strips and filters for their Pb analysis laboratories;
    - Enable the EPA Regions, SLT monitoring and QA Staff to post electronic Chain of Custody data and meta data that is collected with each PEP sampling event for review and validation;
    - Enables the OAQPS, EPA Regional PEP personnel and participating agencies to review the resulting data; and,
    - Provides a repository for tracking the training and proficiency certifications of lab technicians and field operators for the PEP and other national QA programs.
- Evaluation of data and production of reports for trends of precision and bias exhibited by the networks.
- Tracking QA and QC data of each PEP for an assessment of the program's effectiveness in reaching its internal QA/QC objectives.
- SOP and QAPP development and maintenance.
- Development and maintenance of QA/QC data acquisition mechanisms and procedures, validation, and storage.
- Performing other specialized tasks regarding data management and analysis.
- Posting appropriate QA data into AQS.
- Coordinating the Annual certifications of NIST Traceability of calibrators and other instruments use to audit the parametric performance of air samplers and monitors.

- Conducting Training for laboratory and field personnel who assist EPA in implementing the QA programs named herein.

III. STATEMENT OF WORK

Task 1. Work Plan and Cost Estimate

The Contractor shall meet with the Work Assignment Manager (WAM) to discuss the WA tasks and deliverables. This meeting can be via teleconference. The Contractor shall then prepare and submit a Work Plan for this WA.

Task 2. Migrate (to the Contractor's Internet domain), Maintain* and Enhance* the Quality Assurance "QA Website" to Provide for Data Submission from, and Transfer of Information to the Agencies and EPA Regions and Contractors that Participates in the Programs Supported by the Website.

EPA will arrange for RTI to provide the program codes, utilities, tools and documentation as part of the contract transition. RTI will also provide training on how the website and data bases work. Battelle shall:

A. Develop a thorough working knowledge of all aspects of the QA Web facility and associated programming code and migrate the Web facility to Battelle's domain;

B. Acquire technical understanding of all the program code and documentation for the three critical PEP data management activities:

   i. The QA website which houses data reporting and storage facilities for the PEP(s) (as well as the Ambient Monitoring Protocol Gas Verification Program, which will be utilized in another WA);

   ii. The PM2.5/PM10-2.5 Performance Evaluation Program Data Base (the PED): and,

   iii. The Pb-PEP data base, which works in concert with the QA website. This will include MS Access and Sequel Server utilities and tools developed to validate data, and subsequently sort, extract and analyze the PEP data.

* Maintenance and Enhancements for the purposes of the transition means only those program code changes that are necessary to make the QA website fully functional within the Contractors internet domain and digital framework. It should include any errors in functionality that are illuminated during the transition as well, unless the time required would extend beyond the work assignment period. In this latter case the necessary correction would be identified for inclusion in subsequent Work assignments that are specifically designed for more significant changes to the underlying program codes.

Task 3: Develop Proficiency to Provide Technical Support for the National Monitoring Networks Quality Assurance Programs and Training to Participating EPA, EPA Contractors, State, Local and Tribal QA Field and Lab Personnel

The Contractor shall develop a working knowledge of the Ambient Monitoring Protocol Gas Verification Program (AA-PGVP) and, the PM2.5, PM10-2.5 and Lead

(Pb) Performance Evaluation Programs (PEPs).

A. All contractor personnel who are expected to be assigned to WAs associated with the PEP programs shall attend up to three weeks of intensive training provided by EPA prior to March 31, 2013. This training will be a full indoctrination of the PEP(s) to be supported by this WA. In addition to the training on the website and data base program code, this training will cover:

   i. Handling and shipping filters and conducting the field operations;

   ii. Description and discussions of the laboratory procedures;

   iii. Documentation of QC procedures in the field and the in the analytical support laboratories, and recording results of the procedures and tests in the respective program's data base;

   iv. Entry of monitoring data and associated field data into the data base and/or web forms that populate the data base;

   v. Data validations;

   vi. Entering data into AQS;

   vii. Developing reports of bias at various levels of data aggregation; and,

   viii. Certification of NIST Traceability of calibrators and other instruments use to audit the parametric performance of air samplers and monitors.

B. The Contractor shall developing an interface and rapport with the analytical support laboratories that ensures the filter samples arrival at the analytical facilities, and that the analytical results are verified, validated and deposited in the program data bases.

Task 4: Development of a Website Quality Assurance Project Plan

An Environmental Data Operation (EDO) is defined as work performed to obtain, use, or report information pertaining to environmental processes and conditions. EPA requires any EDO funded by EPA to have appropriate QA documentation in place. A Quality Assurance Project Plan (QAPP) is a formal document describing the necessary QA/ QC, and other technical activities that must be implemented to ensure the results of the work performed will satisfy the stated performance criteria. For the development of the website and the various data collection activities performed within the website, Battelle shall develop a QAPP to explain how the integrity of data collection system will be maintained and includes the appropriate database safeguards for entering /storing /manipulating/reducing/reporting data . This document is not expected to be lengthy but shall cover any entry system housed on the website. In general, it should focus mainly on Section B10 (Data Management) in QA/R-5 http://www.epa.gov/quality/qs-docs/r5-final.pdf and section 2.2.10 (Data Management) in QA/G-5 http://www.epa.gov/quality/qs-docs/g5-final.pdf found on the EPA Quality Staffs website

IV. DELIVERABLES

TABLE 1. List of Deliverable and Due Dates

Task	Deliverables	Due Date
1	Work Plan and Cost Estimate	In accordance with the terms of the contract.
2	Migration of QA Website and associated data bases to Contractor's Internet Domain	March 1, 2013
3	Develop Program Proficiency for Technical Support and Training Participating EPA, EPA Contractors, State, Local and Tribal Personnel	March 31, 2013
4	Quality Assurance Project Plan (QAPP)	March 31, 2013

V. REPORTING REQUIREMENTS

The reporting requirements shall be in accordance with the terms and conditions in the contract.

[END]

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-03

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	System for Pb Audits
	Base X Option Period Number	

Contractor	Specify Section and paragraph of Contract SOW
BATTELLE MEMORIAL INSTITUTE	Tasks 3 & 6

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 02/04/2013 To 12/31/2013

Comments:
Title: Entry System for Pb Analysis Audits. This WA includes 75 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 01/01/2013 To 12/31/2013		0
This Action:		75
Total:		75

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Michael Papp (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-2408 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

Contract Number: EP-D-13-005
Work Assignment Number: 1-03
Contractor: Battelle Memorial Institute
Work Assignment Manager: Michael Papp

STATEMENT OF WORK

I. TITLE: Entry System for Pb Analysis Audits

II. PROJECT BACKGROUND

Each year EPA offers to develop Pb Analysis Audits. The requirement for these audits can be found in 40 CFR Part 58 Appendix A Section 3.3.4.2. Starting around August of each calendar year EPA solicits monitoring organization points of contact (POC) to submit the type and quantity of audits it would like to receive for the upcoming year. EPA attempts to keep an up to date spreadsheet on these orders but it requires diligent review of emails to ensure information is correctly logged into the spreadsheet. With the development of the Battelle Website EPA would like to develop a "Pb Analysis Audit Order Form" for monitoring organizations.

III. STATEMENT OF WORK

Task 1. Work Plan and Cost Estimate

The Contractor shall meet with the Work Assignment Manager (WAM) to discuss the WA tasks and deliverables. This meeting can be via teleconference. The Contractor shall then prepare and submit a Work Plan for this WA.

Task 2. Development and Implementation of Audit Selection Form.

Similar to the Ambient Air Protocol Gas Verification Program (AA-PGVP) Survey, EPA currently maintains a point of contact for each monitoring organization currently monitoring for Pb. Battelle shall complete the following subtasks:

A. Web Entry System

EPA seeks to have as streamlined a process as possible to allow current points of contact easy access to the Battelle website. EPA will provide Battelle a complete listing of Point of Contact (POC) email addresses and suggests that the email addresses be uploaded to the website (as well as "pre-loading fields 1-8 in Task B) so that current POCs may need to register only a password upon initial entry to the Battelle Ambient Air Website. Upon selection on "Pb Analysis Audit Order" the POC (based on their email user ID) can enter their email address. If it is necessary to register a password they can then set up a password upon first use. **Note:** there is a possibility that there may be more than one POC for an agency (using PQAO code for agency). Therefore, there needs to be some warning if a second POC (other than the initial entry) attempts to enter data into an already completed form.

B. Develop the "Pb Analysis Audit Order Form.

The following fields are necessary to complete the form:

1. Point of Contact;
2. Email Address (POC);
3. Phone Number (POC);
4. EPA Region (numeric 1-10);
5. State Code;
6. PQAO- Primary Quality Assurance Organization - 4 digit numeric code;
7. Agency Name;
8. Address for audit shipment;
9. Name of person to receive audit shipment (if different then POC);
10. Analyzing Laboratory - Name of analyzing lab with a pick list button for common contract laboratories;
11. No Audits Requested - Field to fill in if you are not requesting audits this year. This will help so that PO will not receive any additional emails;
12. Number of TSP Audits - Need to include some language like "A years supply is 24 (12 low and 12 high concentration)";
13. Number of PM10 Teflon for ICP-MS - Need to include some language like "A years supply is 24 (12 low and 12 high concentration)";
14. Number of PM10 Teflon for XRF analysis - Need to include some language like "A years supply is 6 (6 low and 6 high concentration)"; and,
15. Comment Field - free form comments.

C. Instruction Guide

Similar to the AA-PGVG Entry System a simple set of instructions shall be developed and posted on the Website explaining how the entry system will work for:

1. Point of Contacts already in the system; and,
2. New Point of Contacts, either for a new PQAO or replacing a current PQAO.

D. Data Base Assistance/Maintenance/Manipulation/Notification

Based on the information EPA currently has, fields 1-9 should be populated ahead of time and once a POC enters the system filled in to their form. The only information the POC would need to enter are fields 10-14. An example mock-up of the form is included in this WA as Attachment 1. However, POCs may change and some monitoring personnel may have difficulties entering data into the system. Battelle shall provide phone and email assistance to those requesting help.

Battelle shall maintain the integrity of the data through back up/security procedures documented in the QAPP developed for this overall ambient air web

site.

Based on the initial list provided by EPA, similar to the AA-PGVP procedure, Battelle shall provide two lists to EPA:

1. Point of contact emails address, PQAO and agency name of those completing the form
2. Point of contact email address, PQAO and agency name of those not completing the form

Every two weeks Battelle shall send a "reminder" email to those organizations on the list that have not completed the form. EPA will develop the language for the email.

E. Order Summary Report

After the ordering ends (Sept 1, 2013), Battelle shall produce a summary report of all fields in the order form for all those agencies that have submitted an order. The summary shall include totals for fields 12-14 in subtask B. This report shall be sent to EPA and all the monitoring agencies as a "Final Order Tally".

Task 3: Develop Cost Proposal for the Development of Analysis Audits

The production of TSP filters strips and spiking of PM10 Teflon filters for ICP-MS analyses will be performed around October 2013 in a separate work assignment. (EPA will have PM10 Teflon Filters for XRF developed by another entity.)

EPA will provide Battelle with generic SOPs for the development of both types of analysis audits, as well as the acceptance criteria for the strips. Battelle may wish to modify or propose new SOP's as they feel necessary.

Using Attachment 2 as an example of the WA, Battelle will provide an estimate of the costs to develop the audits no later than Sept 20, 2013. The number of audits required will be based on the summary information described in Task 2E above.

For the cost analysis Battelle should assume: EPA will provide the filter material to Battelle. This activity shall require confirmatory analysis by Battelle, or an analytical laboratory of their choosing as well as acceptance by three referee laboratories (ORIA Montgomery, EPA Region 9, and EPA Region 7). EPA Region 4 may also participate. Battelle shall also ship analysis audit filters to the monitoring organizations.

IV. DELIVERABLES

TABLE 1. List of Deliverable and Due Dates

Task	Deliverables	Due Date
1	Work Plan and Cost Estimate	In accordance with the terms of the contract.
2a	Website available and data preloaded	June 1, 2013

Task	Deliverables	Due Date
2b	Order form ready for entry	June 1, 2013
2c	Instruction Guide Complete	June 1, 2013
2d	Data manipulation/notifications	June 1, 2013
2e	Order Summary Report	Sept 1, 2013
3	Analysis Audit Cost Estimate	Sept 20, 2013

V. REPORTING REQUIREMENTS

The reporting requirements shall be in accordance with the terms and conditions in the contract.

[END]

Attachment 1
Example Pb Analysis Audit Order Form

Pb Analysis Audit Order Form
For Calendar Year 2014
(Ordering will end Sept 1 2013)

Point of Contact

Email Address

Phone #

EPA Region

State

PQAO

Agency

Audit Sample Shipping Address

Person receiving shipment

If different then Point of Contact

Analyzing Laboratory

If multiple agencies using the same laboratory, EPA will order one set of analysis audit filets for that lab

Analysis Audit Order

No audits requested

Removes you from receiving additional reminder emails

TSP Analysis Audits

A years supply is 24
(12 low and 12 high concentration)

# of PM10 Teflon for ICP-MS

A years supply is 24
(12 low and 12 high concentration)

# of PM10 Teflon for XRF

A years supply is 6
(3 low and 3high concentration)

Comments

Attachment 2
Example Analysis Audit WA

TITLE: Pb Audit Strip Development

Contractor:
Contract Number
Work Assignment Number
Work Assignment Manager:

I. PROJECT BACKGROUND

On October 15, 2008, EPA substantially strengthened the national ambient air quality standards (NAAQS) for lead. The revised standards are 10 times tighter than the previous standards and will improve health protection for at-risk groups, especially children.

EPA has revised the level of the primary (health-based) standard from 1.5 micrograms per cubic meter ($\mu g/m^3$), to 0.15 $\mu g/m^3$, measured as total suspended particles (TSP). EPA has revised the secondary (welfare-based) standard to be identical in all respects to the primary standard.

Due to the revision of the Pb NAAQS, a number of changes were made to the Ambient Air QA Program for Pb. One change made was reducing the concentration of the Pb-strip audits relative to the lowering of the NAAQS.

	Prior Regulation		Current Regulation		
Level	**Pb Conc (μg/strip)**	**Ambient Air Conc* ($\mu g/m^3$)**	**Pb Conc (μg/strip)**	**Ambient Air Conc* ($\mu g/m^3$)**	**Conc Percentage of NAAQS**
1	100 - 300	0.5 - 1.5	9 - 30	0.04 - 0.15	30-100%
2	600 - 1000	3.0 - 5.0	60 - 90	0.30 - 0.45	200-300%

* Equivalent ambient Pb concentration in $\mu g/m^3$ is based on sampling at 1.7 m^3/min for 24 hours on a 20.3 cmX25.4 cm (8X10 inch) glass fiber filter.

In addition due to the allowance of PM10 low volume methods EPA must also develop Teflon audit filters for use in destructive and non-destructive analysis.

PURPOSE: To prepare both TSP strips and Teflon filters at two concentration ranges and provide the results of each analysis. If replicate analysis results are acceptable and results between the Battelle and EPA referee labs are comparable, Battelle shall distribute these audits to Pb analyzing laboratories.

II. STATEMENT OF WORK

The Work Assignment (WA) Manager is authorized to provide technical direction and will also provide the Contractor with all filter media. The Contractor shall perform the following specific sub-tasks:

TASK 1 - Preparation of Work Plan

The Contractor shall prepare a work plan in accordance with the terms of the contract.

TASK 2: Development and Testing of Pb Analysis Audits- Filter Strips

816, 1-inch Pb strips shall be made at two concentrations ranges for a total of 312 strips per concentration. One concentration range shall be from 30-100% and a second from 200-300% of the current NAAQS. EPA suggests strip concentrations of around **15 µg/strip** for the low concentration and around **65 µg/strip** for the higher concentration,. All strips within the selected concentration ranges shall be made at the same concentration. The strips shall be packaged individually to protect strip integrity. However, each lab will require 1 years worth of strips so 12 low concentration strips and 12 high concentration strips, for a total of 24 strips will also be bagged so that a group of 24 strips can be sent to a laboratory.

The Contractor shall develop the audit samples as indicated in the SOP developed for WA 2-10/2-13. The Contractor shall analyze the filters by ICP-MS following EQL-0510-191, and based upon the QAPP GS-23F-0147N

The labeling of the strips will be "BAT-Filter Type-Year-Concentration-Filter Number"

1) Low Concentration Filter - "**BAT-TSP-2013-01-001**"
2) High Concentration Filter - "**BAT-TSP-2013-02-001**"

The strips will be made from lead solutions purchased from NIST and pipettes of known and tested accuracy and reliability.

Battelle shall analyze a minimum of 7 filters from each concentration in order to establish the audit strip concentrations. **Filters shall be considered acceptable if within +/- 5 percent relative standard deviation from the average of the determined values. Any filters not meeting this criteria shall be rejected and the Contractor shall be directed to remake the rejected level. All raw data and final concentrations shall be submitted to EPA.**

In addition, Battelle shall distribute six strips at each concentration to EPA Region 9, EPA ORIA Montgomery Laboratory, and EPA Region 7 who will analyze them. The filter analysis for each of the labs listed above will also be considered acceptable **if within +/- 5 percent relative standard deviation from the average of the labs determined values and if the average concentration for each range is within 7% of the Contractors established concentration.**

TASK 3: Development and Testing of Pb Analysis Audits – 46.2 mm Teflon Filters

200, 46.2 mm Teflon filters shall be made at two concentrations ranges for a total of 100 filters per concentration. One concentration range shall be from 30-100% and a second from 200-300% of the current NAAQS. EPA suggests concentrations of around **2.5 µg/strip** for the low concentration and around **8 µg/strip** for the higher concentration, similar to those prepared in 2012 WA 4-02 (see examples below). All filters within the selected concentration ranges shall be made at the same concentration. The filters shall be packaged individually to protect integrity. However, each lab will require 1 years worth of filters so 12 low concentration filters and 12 high concentration filters, for a total of 24 filters will also be bagged so that a group of 24 filters can be sent to a laboratory.

	PM10 Teflon by extraction				Sampler flow L/min	Total flow 24 hr (m^3)
	Level 1		Level 2		16.67	24.0048
	30%	100%	200%	300%		
ug/m3	0.045	0.15	0.3	0.45		
ug/filter	1.08	3.60	7.20	10.80		

The Contractor shall develop the audit samples based on the SOP: *Preparation of Lead Filter Audit Filters from NIST SRM and Teflon Filters Standard Operating Procedure (SOP).* The Contractor shall analyze the filters by ICP-MS following EQL-0512-202 (or an FEM approved ICP-MS method), and based upon the QAPP GS-23F-0147N.

The labeling of the strips shall be "BAT-Filter Type-Year-Concentration-Filter Number"

1) Low Concentration Filter - "**BAT-TEF-2013-01-001**"
2) High Concentration Filter - "**BAT-TEF-2013-02-001**"

The filters shall be made from lead solutions purchased from NIST and pipettes of known and tested accuracy and reliability.

Battelle shall analyze a minimum of 7 filters from each concentration in order to establish the audit concentrations. **Filters shall be considered acceptable if within +/- 5 percent relative standard deviation from the average of the determined values. Any filters not meeting this criteria shall be rejected and the Contractor shall be directed to remake the rejected level. All raw data and final concentrations shall be submitted to EPA.**

In addition, Battelle shall prepare two additional sets of Teflon filters for referee analysis and provide them to OAQPS. The filter analysis for the referee labs listed will be considered acceptable **if within +/- 5 percent relative standard deviation from the average of the labs determined values and if the average concentration for each range is within 7% of the Contractors established concentration.**

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-04

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013 Base X Option Period Number	CSN Data Assessments

Contractor: BATTELLE MEMORIAL INSTITUTE

Specify Section and paragraph of Contract SOW: Task 3

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 03/15/2013 To 12/31/2013

Comments:
Title: Chemical Speciation Network (CSN) Data Assessments. This WA includes 200 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	01/01/2013 To 12/31/2013		0
This Action:			200
Total:			200

Work Plan / Cost Estimate Approvals

Contractor WP Dated:		Cost/Fee:	LOE:
Cumulative Approved:		Cost/Fee:	LOE:

Work Assignment Manager Name: Elizabeth Landis (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-2262	
	FAX Number:	
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-4018	
	FAX Number: 919-541-4267	
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-3112	
	FAX Number:	

Contract Number: EP-D-13-005
Work Assignment Number: 1-04

Battelle Memorial Institute
Work Assignment Manager: Beth Landis

STATEMENT OF WORK

I. TITLE: Chemical Speciation Network (CSN) Data Assessments

II. PROJECT BACKGROUND

The deployment of a PM monitoring network is a critical component in the national implementation of the PM NAAQS. The ambient data from this network drives an array of regulatory decisions, ranging from designating areas as attainment or nonattainment, to developing cost-effective control programs and tracking the progress of such programs. Data derived from the PM monitoring network include both aerosol mass measurements and chemical speciation data. Mass measurements are used principally for PM NAAQS comparison purposes in identifying areas that meet or do not meet PM NAAQS, and in supporting designation as attainment or non-attainment. Chemical speciation data serve the implementation needs associated with developing emission mitigation approaches to reduce ambient aerosol levels and a variety of research and modeling needs. These measurements also provide support for regional haze assessments. The PM Chemical Speciation Network (CSN) consists of approximately 50 Trends sites for routine speciation monitoring and another 150 or so sites for state/local driven monitoring needs. There are several data evaluation and assessment needs that can be used to inform decision making and improve the overall quality of data generated by the CSN monitoring network.

The contractor shall not publish or present results from this work assignment without prior notification and review by EPA.

III. STATEMENT OF WORK

The contractor shall provide the following:

Task 1. Work Plan and Cost Estimate for Work Assignment

The contractor shall prepare a work plan and cost estimate in accordance with the terms of the contract. The contractor shall break out cost estimates by task and subtask.

Task 2. Collocated CSN: Within network variability

NOTE: All reports listed in Task 2 shall be developed in SAS in a manner that can be used to regenerate reports with different conditions (e.g., change year). The SAS code shall be made available to EPA as a product of the WA. Where appropriate, the sampling method shall be noted, as certain samplers have changed since the beginning of the network.

2A - CSN Collocated Data

The CSN currently has collocated samplers at 6 sites across the network for estimates of precision for the major chemical species ($PM_{2.5}$, ions, select elements, and carbon). The 6 sites are: Bakersfield, CA [060290014]; Rubidoux, CA [060658001]; New Brunswick, NJ [340230006]; GT Craig, OH [390350060]; Roxbury, MA [250250042]; and Deer Park, TX [482011039]. These sites have been collocated since the beginning of the CSN (2001). The contractor shall retrieve the data from EPA's AQS for analysis from 2001 to present. At a minimum, precision estimates shall be made using equation 11 of 40 CFR part 58, appendix A. The data will be used to evaluate and explore various aspects of precision for these sites. This will include:

- A table of CV statistics (Number of Sites, Min, 25th Percentile, Mean, Standard Deviation, 75th Percentile and Max) by site and by year (2001-2012) for all parameters where at least 50% of the measurements are greater than the MDL.
- A table of concentration statistics for both the primary and collocated sample data (Number of Observations, Mean, Median, Min and Max) by site and by year (2001-2012) for all parameters where at least 50% of the measurements are greater than the MDL.
- A table of precision statistics (Number of Precision Pairs, Min, 25th Percentile, Mean, Median, 75 Percentile, Max, Standard Deviation, and 90% upper bound CV) by site and by year (2001-2012) for all parameters (regardless of the percentage of measurements greater than the MDL).

2B - CSN Field Blank Data

The CSN collects a variety of field-related blank types (field blanks, trip blanks, and backup filter blanks) for the mass, elements, ions, and carbon parameters. The CSN began in 2001 with at least 3 sampler types used to collect all of the species of interest (MetOne SASS, Andersen RAAS, and URG MASS). In 2007, the CSN began converting the carbon sampler and analysis method to be consistent with the Inter-agency

Monitoring of Protected Visual Environments (IMPROVE) program. The IMPROVE-like URG3000N carbon sampler and the IMPROVE_A analysis method was implemented at all CSN by October 2009. The collection of backup filter blanks was also instituted with the carbon conversion. The CSN has migrated to two sampler types, the MetOne SASS/SuperSASS for mass, elements, and ions and the URG 3000N for carbon.
In this task, the contractor shall obtain all CSN blank data from EPA's AQS data base. The blank data shall be compiled and statistics performed to show blank concentration trends over time (2001 to 2012) along with the maximum, minimum, median, and mean blank concentrations by year (all sites combined) and by sampler type for all parameters where at least 50% of the measurements are greater than the MDL. Results shall be provided in mass (total micrograms per filter) and in concentration (micrograms per cubic meter) using a nominal sample volume for each sampler type. For each of these parameters and sampler types, a table shall be created along with graphical presentation of the trends (e.g., annual box plots) that clearly displays the mean, median, minimum, and maximum results. The contractor shall develop SAS code for this assessment that automates the process and transfer the final code to EPA for future assessments. All plots and statistics shall also be provided in electronic format.

Task 3. Relating Old CSN TOT with New CSN TOR Data:

NOTE: All reports listed in Task 3 shall be developed in SAS in a manner that can be used to regenerate reports with different conditions (e.g., change year). The SAS code shall be made available to EPA as a product of the WA. Where appropriate, the sampling method shall be noted, as certain samplers have changed since the beginning of the network.

3A – Quality Assurance Project Plan (QAPP)

Prior to performing Task 3B, the contractor shall provide EPA with a level IV Quality Assurance Project Plan (QAPP) that covers an environmental data operation (EDO) to relate old CSN carbon data with new CSN carbon data (see further explanation of task below). The QAPP must include a description of the type of evaluations they will conduct in order for EPA to review. A category IV QAPP includes projects involving Environmental Data Operations (EDOs) to study basic phenomena or issues, including proof of concepts, screening for particular analytical species and their physical characteristics. This work assignment is such a project and thus generally does not require extensive detailed QA/QC activities and documentation. Such projects include

those producing results that are used to evaluate and select options for interim decisions or to perform feasibility studies or preliminary assessments of unexplored areas for possible future work. Level IV projects include monitoring, modeling, and/or analyses involving one time studies, local scale monitoring; monitoring, modeling, emission inventory, assessments; and field testing of performance test methods and source monitoring procedures, evaluating formal requests to allow the use of alternative methods, or investigating the feasibility of new or modified performance test methods or source monitoring procedures. The following guidance must be followed when creating the QAPP:
http://www.epa.gov/QUALITY/qapps.html

3B – Relating Old and New Carbon Data

EPA has been measuring organic carbon (OC) and elemental carbon (EC) in the CSN since 2001. To support the regional haze and $PM_{2.5}$ programs, EPA also funds a largely rural network called IMPROVE. Together with support from NPS and other Federal agencies, the IMPROVE network provides carbon measurements at approximately 160 national parks, wilderness and other rural locations nationwide.

The CSN transitioned to the IMPROVE sampling and analysis protocols for carbon beginning in 2007. The transition was completed in 2009. For the first 6 years of CSN operation, urban and rural carbon have been collected with different samplers and analyzed by different thermal optical methods. For chemical analysis, CSN has used a NIOSH-type thermal optical transmittance (TOT) method for measures of OC and EC. IMPROVE measurements are based on thermal optical reflectance (TOR) with a different thermal evolution temperature profile. Both measurement protocols provide operationally-defined measures of OC and EC. Starting in 2005, however, IMPROVE switched to an upgraded TOR analyzer with more accurate temperature settings. The new IMPROVE analyzer also provides TOT measurements which may have value in relating the two network's data.

National consistency in carbon measurements for source attribution, model evaluation and urban-rural comparisons is very important. The association between ambient concentrations of EC in $PM_{2.5}$ and human health effects is also a subject of considerable interest to health researchers.

EPA has also reorganized the parameter codes and data field definitions in AQS to

better differentiate old from new carbon measurement data according to collection sampler, analytical protocol and adjustments, if any, for sampling artifacts. See the link below for the parameter code descriptions:
http://epa.gov/ttn/amtic/files/ambient/pm25/spec/urg3000-method-codes.pdf

Available collocated old CSN/new CSN and old CSN/IMPROVE data should be rigorously analyzed to determine if there is a reasonably good method (mathematical conversion or algorithm) for predicting the former from the latter (including using sub-fraction information and possibly using location/seasonal variables) or vice versa. Data that includes the effect of the sampler difference should also be analyzed. Prior exploration of the CSN and IMPROVE relationship has been done by UC Davis. EPA will provide the results of this prior work to the contractor to evaluate whether the regressions developed and methods used can be applied or expanded for use in this effort.

There are 11 sites where collocated old and new CSN carbon data were collected for one year (2009-2010). See table 1 below.

Table 1. CSN Sites Collocated with Old and New Carbon

State	City	Site Name	AQS #
NY	New York	Queens College 2	360810124
NY	New York	Bronx – IS52	360050110
GA	Atlanta	South Dekalb	130890002
AL	Birmingham	North Birmingham	010730023
MI	Detroit	Allen Park	261630001
OH	Cleveland	GT Craig	390350060
IL	Chicago	ComEd	170310076
CO	Denver	Commerce City	080010006
CA	LA	Rubidoux (West Riverside)	060658001
CA	Sacramento	Del Paso Manor	060670010
WA	Seattle	Beacon Hill	530330080

In addition, there are 8 sites that have collected old CSN and IMPROVE data (similar to new CSN) in the past (after 2005). These sites include: North Birmingham, AL [010730023], Phoenix Supersite, AZ [040139997], Fresno – First Street, CA [060190008], IS 52, NY [360050110], Beacon Hill, WA [530330080], South DeKalb, GA [130890002], Allen Park, MI [261630001], and Pittsburgh, PA [420030008]. Carbon data from all

available sites shall be used for this analysis.

IV. DELIVERABLES

Table 2. List of Deliverables and Due Dates

Task	Deliverables	Due Date
1	Work Plan and cost estimate	In accordance with the terms of the contract.
2	Collocated CSN: Within network variability – SAS code and tables	December 31, 2013
3	Reconciling old and new carbon data – Level IV QAPP, mathematical conversion or algorithm & SAS code	December 31, 2013

V. REPORTING REQUIREMENTS

All reports shall be in accordance with the terms and conditions in the contract. Any programming language developed to perform and complete the deliverables in Table 2 shall be in the SAS language. An electronic copy of all SAS code developed under this WA shall be delivered at the end of the WA period of performance.

[END]

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-04

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	CSN Data Assessments
	Base X Option Period Number	

Contractor	Specify Section and paragraph of Contract SOW
BATTELLE MEMORIAL INSTITUTE	Task 3

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 03/15/2013 To 12/31/2013

Comments:
Title: Chemical Speciation Network (CSN) Data Assessments. This change removes the cost ceiling on the work assignment. To the best of our knowledge, this work does not duplicate any work prev. performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period: 01/01/2013 To 12/31/2013 — Cost/Fee: — LOE:

This Action:

Total:

Work Plan / Cost Estimate Approvals

Contractor WP Dated: — Cost/Fee: — LOE:

Cumulative Approved: — Cost/Fee: — LOE:

Work Assignment Manager Name Elizabeth Landis (Signature) (Date)	Branch/Mail Code:	
	Phone Number	919-541-2262
	FAX Number:	
Project Officer Name Jeff Curry (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	919-541-4018
	FAX Number:	919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	919-541-3112
	FAX Number:	

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-05

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	NIST Sampler Support
	Base X Option Period Number	

Contractor: BATTELLE MEMORIAL INSTITUTE

Specify Section and paragraph of Contract SOW: Tasks 1 & 12

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 04/05/2013 To 12/31/2013

Comments:
Title: NIST Traceability & Sampler Support. This WA includes 50 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	01/01/2013 To 12/31/2013		0
This Action:			50
Total:			50

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee:	LOE:
Cumulative Approved:	Cost/Fee:	LOE:

Work Assignment Manager Name: Dennis Crumpler (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-0871 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-05

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	NIST Sampler Support
	Base X Option Period Number	

Contractor: BATTELLE MEMORIAL INSTITUTE

Specify Section and paragraph of Contract SOW: Tasks 1 & 12

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 04/05/2013 To 12/31/2013

Comments:
Title: NIST Traceability & Sampler Support. This WA includes 50 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (Max 2): ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 01/01/2013 To 12/31/2013		0
This Action:		50
Total:		50

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Dennis Crumpler (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-0871 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

Contract Number: EP-D-13-005 Work Assignment Number: 1-05
Contractor: Battelle Memorial Institute
Work Assignment Manager (WAM): Dennis Crumpler

STATEMENT OF WORK

I. TITLE: NIST Traceability & Sampler Support

II. PROJECT BACKGROUND

This Work Assignment (WA) covers two areas of support for the PM2.5, PM10-2.5 and Lead (Pb) Performance Evaluation Programs (PEPs). The first area is to coordinate the annual certification of National Institute of Science and Technology (NIST) traceability of calibration and reference standards used by EPA, contractors and Federal Land Managers in cooperative monitoring and quality assurance programs. The programs that deploy the reference standards to calibrate or audit performance parameters are required by 40 CFR Part 58 Appendix A. Because accuracy and reliability are paramount, this work is performed annually. The second area of support is to assist the Program Leads in tracking and maintaining the samplers used in each PEP.

This WA will provide logistical assistance to:

A. Inventory calibrators/audit reference standards that are used in the programs under EPA oversight;

B. Collect and transport the calibrators/audit standards to EPA's chosen certification lab;

C. Perform post-certification quality control checks of the all the calibrators/audit reference standards; and,

D. Return the instruments to their location of deployment, issuing instrument advisories, and a final report.

EPA implements the PEPs to assess bias of measurements made by the national PM2.5 FRM/FEM monitoring network; the Pb monitoring network, and in 2012, the PM coarse network (fraction of PM-10 that is larger than PM2.5). It is implemented through Region ESAT contractors and some State, local and Tribal auditing groups. The national objective is accomplished by simultaneously measuring the same ambient pollutant concentration as a network sampler with a well maintained and closely controlled FRM sampler. EPA employs a fleet of these samplers. The fleet of samplers shall operate as near identically as possible. NIST Traceable multi-calibrators (and some single-parameter devices) are used to ensure the temperature and barometric pressure sensors used by the samplers generate consistent and reproducible results. Sampler flow rates are controlled to within 5% based on the required accuracy of the calibrators.

EPA Regional Staff and Federal Land Managers perform periodic site and sampler performance audits at sites indicated above as well as the IMPROVE and PM2.5 Chemical Speciation Networks. The calibrators/audit reference standards are similar (and sometimes the same) instruments used for the PEP program.

The Office of Air Quality Policy and Standards (OAQPS) certifies all of the multi calibrators/audit reference standards annually. The certification is done in a NIST accredited metrology laboratory at the EPA facility in RTP, NC. This facility is operated by AMEC.

The project will certify a total of approximately 90 instruments. The instruments are typically collected in approximately 5 to 7 groups of like kind. The WAM will provide an inventory of the instruments. From the inventory a natural grouping regimen will emerge. The processing of a group is called a "round." For example, each EPA Region will ship one of their 2 or 3 BGI Delta Cals in round 1and the other(s) in round 2 (and 3). Each group is batch-processed by the metrology lab, which minimizes set-up costs and expedites the return to service. As noted above, OAQPS through their contractor AMEC, tests the instrument certification and then ships the instruments back to their respective users for field service.

Certain instruments may not perform adequately at all of their design ranges; however, they may operate satisfactorily in the range or ranges that are necessary for the program in which they are deployed. Any instruments that do not operate within acceptance limits are identified. Advisories of these instruments shall be issued the EPA Regional Staff and support contractors that are responsible for their field use. An example of a previous year's report, both written and on a CD, will be provided to illustrate the desirable format and provide a starting data set. The final annual report contains the inventory, an updated Summary Report and a comprehensive report of results.

III. STATEMENT OF WORK

During the period of performance of this WA, the Contractor shall immediately inform the WAM by telephone of any problem(s) that may potentially impede performance. The Contractor shall provide recommended corrective action(s) needed by the Contractor or EPA to solve the problem.

The Contractor shall manage the NIST traceability certification of calibrators and audit reference standards for Regional PEP and speciation auditors that support the PEP and speciation programs. Instruments shall include:

1. VWR** digital temperature meters and probes.
2. Dwyer** Handheld pressure verification device.
3. Andersen** Instruments dry gas meters.
4. R&P Chinook** flow transfer standard devices.
5. BGI Delta-Cal temperature, pressure, and flow calibration device.

6. BGI Tri-Cal or Tetra Cal temperature, pressure, and flow calibration device.
7. BGI HiVolCals (for high volume samplers).

** Most of these devices have been phased out of use by PEP field scientists by direction of the OAQPS QA lead for PEP and speciation. However, some may be reinstituted for Pb PEP sampler internal audit devices.

In order to properly coordinate with the EPA's RTP, NC metrology laboratory, it is imperative that all instruments are shipped to, and distributed from, the Contractor's local (RTP area) facility. Battelle's local staff shall have appreciable knowledge of ambient air pollution monitoring and the calibration equipment for air samplers and monitors. Battelle shall have local access to a reliable air sampler that utilizes a flow rate of 16.7 liters per minute for PM2.5, PM coarse, and PM 10 Pb samplers; and 1.2 cubic meters per minute for high-volume TSP Pb samplers. If necessary, the Government can furnish this equipment. All Government Furnished Equipment (GFE) shall be carefully coordinated with the WAM, Contracting Officer and Project Officer to ensure compliance with the appropriate GFE contract clauses.

The NIST certifications must confirm the manufacturer's claim for accuracy and readability on an annual basis. Initial vendor certifications are on record at EPA. The WAM will provide copies of the previous annual certification to the Contractor. The Contractor shall ensure that a copy of the previous annual certification accompanies each instrument when it is shipped.

Task 1. Work Plan and Cost Estimate

The Contractor shall meet with the WAM to discuss the WA tasks and deliverables. This meeting can be via teleconference. The Contractor shall then prepare and submit a Work Plan for this WA.

Task 2: Contract Transition

Under the predecessor contract (EP-D-08-047) in the fall of 2012 RTI began the next annual certification project. RTI has certified, QC-checked and returned the first 3 rounds of instruments to service. The WAM will provide Battelle with a copy of the associated historical MS Access database used by RTI. Battelle shall use the 2011/2012 files as templates for the reports and documentation under this WA.

As part of the transition clause of their contract, RTI will thoroughly explain, demonstrate, and answer all questions pertaining to how they performed the tasks in this WA. RTI's assistance in the transition will end on March 31,

2013. Note: WA 1-02 requires Battelle to have attended at least one meeting with RTI. This affords an excellent opportunity for Battelle to throughly comprehend the WA tasks.

Task 3. Inventory Control

The Contractor shall add the following to the instruments to inventory section of the certification notebook:

A. Any additional verification equipment that is purchased by EPA OAQPS and is deployed to a specific Region's PEP implementing contractor or SLT agency;

B. Any verification equipment the EPA Regional PEP and QA staff identifies additional audit equipment for use in the PEP or for auditing PM2.5 chemical speciation and FRM Network equipment; and,

C. Approximately 90 instruments are deployed through the 10 Regional PEPs and OAQPS. The inventory should include approximately 22 new high volume flow or multi parameter calibration standards that have been added over the last 2 years for the implementation of the Pb PEP. The inventory should be reviewed to assure that they have been accounted for. Approximately four new low volume multi-parameter standards are expected to be added to the PEP program in 2013.

The Contractor shall document if, when, and why, a calibrator or audit reference standard is removed from service.

Task 4: Coordinate the Certification Process

Three rounds (Subtasks B-D) below have been completed for 2012/2013. Round 3 has been completed through a transition WA issued to RTI under the preceding contract.

The Contractor shall:

A. Review the Certification SOPs and QAPP of the EPA ORD Metrology Lab at RTP (or any vendors) that are required to perform certifications according to NIST accreditation;

B. Organize the collection of similar calibration/audit standards in up to 4 groups or rounds. The Contractor shall prepare shipping labels for the Regional Office shipments to the WA Contractor's local RTP office;

C. When the reference audit devices are received the Contractor shall

transfer the batch to EPA ORD's Metrology Lab. If a repair is necessary to make the instrument operational, the Contractor shall contact the appropriate vendor, acquire a "Return/Repair Authorization Number" and have it shipped directly to that vender for a cost estimate of the repair. The cost estimate shall be forwarded to the EPA WAM who will approve and arrange for payment of the repair or postpone it. EPA will cover shipping through an existing contract with UPS or USPS;

D. Retrieve tested instruments from the Metrology lab with appropriate certificates and provide QC verification of work accomplished. This is typically performed by testing the parametric performance of a FRM sampler believed to be in good operating condition. The WAM can arrange for a temporary loan of one of the Programs' portable samplers;

E. Identify calibrators and audit reference standards that are performing near and below the acceptable tolerance limits. Some instruments such as the BGI TriCal or TetraCal may perform outside of acceptance limits in operating ranges that are not likely to be encountered in the PEP program or other auditing activities. These instruments may be returned to field service, but advisories of their performance shall be sent to the personnel who use the instrument;

F. Track all certificates in a certification booklet;

G. Ensure all calibration/audit reference standards are shipped back to, and received by, OAQPS, the appropriate EPA Region or their ESAT contractor, any other participating agency approved by the WAM; and,

H. Troubleshoot samplers that are returned to OAQPS for failure or erratic behavior.

Task 5. Document Results

The Contractor shall compose and issue advisories (mentioned in Task 2) to each EPA Regional Office PEP or QA contact and their supporting contractor, or other EPA or Federal agency auditor, or other SLT contact who is responsible for or utilizes a calibrator/audit device that has exhibited a performance outside of the acceptance limits for a given range of the measured parameter during the certification.

The Contractor shall update the annual summary report of certification results and the details of the findings in the 2012/2013 certification notebook, and certificate hard-copy booklet.

Task 6. PEP Sampler Inventory

A. The WAM will supply the Contractor with an inventory of the PM2.5 samplers used by the PEP nationwide. The Contractor shall:

i. Verify the status of samplers utilized at this time;

ii. Identify new samplers that have been purchased by the EPA Regional Office or received from OAQPS; and,

iii. List the reason any samplers have been rendered unusable and disposed of.

B. The WAM will supply a second list of high volume TSP samplers that have been deployed to the Regions. The Contractor shall contact each EPA Regional ESAT contractor and collect the same information.

C. The Contractor shall maintain the inventories through the duration of the WA and prepare a summary report of the findings to be submitted to the WAM at the WAs conclusion.

IV. DELIVERABLES

TABLE 1. List of Deliverable and Due Dates

Task	Deliverable	Due Date
1.	Work Plan	In accordance with the contract
2.	Draft report templates	Within 15 days of WA effective date
3.	Update inventory	Within 15 days of WA effective date
4.	Coordinate delivery and retrieval of all calibrators/audit standards to the Metrology Lab; Complete certification QC-checks and return all instruments to their origins. Issue instrument advisories.	May 31, 2013
5.	Complete final summary of calibrator certifications, comprehensive report, and certificate booklet	June 30, 2013
6.	Complete sampler inventories and summary report	July 31, 2012
All	Monthly Progress Report	In accordance with the contract

V. REPORTING REQUIREMENTS

The Contractor shall submit monthly progress reports which summarize the overall progress plus a description for each task or logical segment of work on which effort was expended during the month. Any problems (Technical or administrative) that have developed shall be listed and shall continue to be listed until resolved. The report shall include a section showing cost and labor hours expended to date, and projected expenditures and labor hours at completion. Each report shall be submitted in accordance with the terms of the contract.

All draft, final draft or final documents shall be submitted as electronic digital files on a compact disc in both PDF and Microsoft Word for Windows format. The Contractor shall remain cognizant of the current version of Microsoft Word that the EPA is using. For the duration of this WA Microsoft Office 2007 will be in use.

[END]

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-05

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	NIST Sampler Support
	Base X Option Period Number	

Contractor	Specify Section and paragraph of Contract SOW
BATTELLE MEMORIAL INSTITUTE	Tasks 1 & 2

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 04/05/2013 To 06/25/2013

Comments:
Title: NIST Traceability & Sampler Support. This work assignment is cancelled. Battelle shall immediately stop work. No further deliverables, including reports, are required.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (Max 2) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	01/01/2013 To 12/31/2013		
This Action:			
Total:			

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Dennis Crumpler (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-0871	
	FAX Number:	
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-4018	
	FAX Number: 919-541-4267	
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-3112	
	FAX Number:	

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-06

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	X-Ray Fluorescence for Filters
	Base X Option Period Number	

Contractor: BATTELLE MEMORIAL INSTITUTE

Specify Section and paragraph of Contract SOW: Task 3

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 09/03/2013 To 12/31/2013

Comments:
Title: X-Ray Fluorescence Analysis for Low Volume 46.2mm Lead Performance Evaluation Program Filters. This WA includes 50 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 01/01/2013 To 12/31/2013		0
This Action:		50
Total:		50

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Greg Noah (Signature) (Date)	Branch/Mail Code: Phone Number: 706-355-8635 FAX Number: 706-355-8744
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Antonio L. Leathers (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-2312 FAX Number:

Contract Number: EP-D-13-005
Contractor: Battelle Memorial Institute

Work Assignment Number: 1-06
WAM: Gregory W. Noah

STATEMENT OF WORK

I. TITLE

X-Ray Fluorescence Analysis for Low Volume 46.2mm Lead Performance Evaluation Program Filters

II. PURPOSE

EPA requires laboratory services for X-ray fluorescence (XRF) analysis for Pb on approximately 150 46.2mm Teflon© filters used by low volume samplers.

III. PROJECT BACKGROUND

The national lead (Pb) monitoring network measures Pb concentrations for comparison against the EPA National Ambient Air Quality Standards (NAAQS) for Pb which is 0.15 ug/m^3. The Pb Performance Evaluation Program (PEP) is a quality assurance program designed and implemented by EPA to assess bias in the routine monitoring data from the national Pb monitoring network. In the Pb-PEP, samples are collected and analyzed independently to produce data for a bias estimate. The monitoring rule allows for two sampling options; high volume and low volume sampling. The Pb-PEP must assess both monitoring methods. The analyses of the high volume filters are conducted within the Pb-PEP program; however, the low volume sample analyses have not been permanently assigned.

IV. STATEMENT OF WORK

Task 1. Work Plan and Cost Estimate

The Contractor shall meet with the Work Assignment Manager (WAM) to discuss the WA tasks and deliverables. This meeting can be via teleconference. The Contractor shall then prepare and submit a Work Plan for this WA which includes a cost estimate for the analyses. The Contractor shall also submit the Standard Operating Procedure for the XRF analysis and QAPP for the XRF analysis to EPA for review.

Task 2. Analyze Confirmatory Analysis Samples

The Contractor shall analyze 6 audit filters whose Pb content has been independently confirmed to demonstrate competency for analyzing for Pb using XRF. The results of the audit samples shall be discussed and compared to historical precision estimates before proceeding to the following tasks.

STATEMENT OF WORK

Task 3. XRF Analysis of Pb-PEP 46.2mm Teflon© Filters

The Pb-PEP requires the analysis of approximately 150 46.2mm Teflon© low volume filters. Battelle shall complete the following tasks related to the analysis and handling of the filters, and data review.

A. Sample Receipt

The XRF laboratory can expect to receive approximately 150 46.2mm Teflon© filters annually. The filters are not expected to arrive on a routine schedule. The audit filter media originate from the Region 4 filter weighing laboratory, and the auditor originates the Chain of Custody. Audits are completed according to individual schedules set in the EPA regions; therefore, the laboratory shall be flexible in receiving and batching filters. Samples will arrive in cassettes at ambient temperature with a Chain of Custody from the auditor. Monthly, the laboratory shall return the cassettes to the Region 4 laboratory. Shipping costs shall be covered by the EPA shipping contract with UPS. Currently, there is a backlog of audit filters, and the laboratory can expect several shipments of 20 to 30 filters for analysis.

B. Conduct the XRF Analysis

There is no published holding time for the XRF filters; however, Pb-PEP requests that filters should be analyzed within 30 days. The XRF laboratory shall meet the following quality control requirements and Pb-PEP program requirements as stated in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, May 2013. The applicable references for XRF laboratory activities are below:

Laboratory Activities (XRF Analysis)			
Filter Holding Times *Pre-sampling*	*all filters*	*< 30 days before sampling*	1,2 and 3) 40 CFR Part 50, App L Sec 8.3.5 Required only if filters will be used for PM10c mass as well as Pb. If only used for Pb then 30 day pre-sampling holding time not required
Analysis Audits	*6 filters/quarter 3 at each concentration range*	10% (percent difference)	1 and 2) 40 CFR Part 58, App A, sec 3.3.4.2 3) Recommendation
Field Filter Blank	1/quarter	< 0.01 µg/m^3	1) 40 CFR Part 50 App Q sec 6.1.2.1 2 and 3) Recommendation
Lab Filter Blank	1/ sample run	<.003 µg/m^3	1 40 CFR part 50 App Q sec 6.1.2.1 2 and 3) Recommendation
Thin Film Standards (standard reference materials)	Beginning and end of each analytical run	XRF conc. ± 3x the 1 sigma uncertainty overlaps the NIST certified conc. + 1x its reported uncertainty.	1) 40 CFR Part 50 App Q sec 6.2.3 2 and 3) recommendation
Run time quality control standards Checking peak areas, background areas, centroid and FWHM	Beginning and end of each analytical run	Target value ± 3 SD	1,2,and 3) Recommendation Target values and SD of QC samples established prior to analysis.
XRF analyzer calibration	*1/year or when significant repairs* or changes occur or QC limits exceeded	XRF conc. ± 3x the 1 sigma uncertainty overlaps the NIST certified conc. + 1x its reported uncertainty.	1 and 2) 40 CFR Part 50 App Q sec 6.2.4 3) Recommendation
Background Measurement and Correction	*20 clean blank filters for each filter lot used*	NA	1 and 2) 40 CFR Part 50 App Q sec 6.2.4.2

C. **Data Processing, Validation, and Reporting**

The XRF laboratory shall conduct quality assurance on the XRF data generated as a component of the validation procedure. The data shall also be subject to the routine quality control built into the XRF laboratories quality system. Upon validation, the data shall be submitted to the AIRQA website operated by Battelle. This website is under development, but should be live shortly. The XRF laboratory must coordinate with Battelle to upload the data. The data should be uploaded to AIR QA in batches, not individually. The data package for transmittal to AIRQA contains the following documents:

1. Chain of Custody – Each filter received shall have its own chain of custody that was originated by the auditor and completed by the laboratory.
2. Lab Report – Each batch shall have a report generated by the laboratory that summarizes samples analyzed, quality assurance/control, results, XRF run details, and detection limits and flags.
3. Electronic Data Deliverable – Each batch shall also have an electronic data deliverable (EDD) to allow electronic pairing of laboratory data with corresponding field data. The AIRQA website requires an Excel spreadsheet with specific formatting. An example EDD is attached to this WA. As the new version of the AIRQA website is created, the format could change. The laboratory should coordinate with Battelle to ensure compatibility.

Low volume XRF data should be loaded into AIRQA on a monthly basis. The audit data should also have been through the quality assurance system loaded into the AIRQA website within 60 days of the sample run day.

V. DELIVERABLES

TABLE 1. List of Deliverable and Due Dates

Task	Deliverables	Due Date
1	Work Plan and Cost Estimate	In accordance with the terms of the contract.
2a	XRF Analysis, sample receipt	Upon arrival of filters September 1, 2013
2b	XRF Analysis, conduct XRF analysis	Upon arrival of filters September 1, 2013
2c	XRF Analysis, data processing, validation, and reporting	Upon completion of analysis October 1, 2013

IV. REPORTING REQUIREMENTS

The reporting requirements shall be in accordance with the terms and conditions in the contract.

[END]

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 1-07

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-13-005	01/01/2013 To 12/31/2013	Pb Audit Strip Development
	Base X Option Period Number	

Contractor	Specify Section and paragraph of Contract SOW
BATTELLE MEMORIAL INSTITUTE	Tasks 3 & 6

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 09/17/2013 To 12/31/2013

Comments:
Title: Pb Audit Strip Development. This WA includes 100 hours to prepare the work plan and begin work. To the best of our knowledge, this work does not duplicate any work previously performed, or currently being performed by this office.
Alternate WAM: Greg Noah

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:	Cost/Fee:	LOE:
01/01/2013 To 12/31/2013		0
This Action:		100
Total:		100

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee:	LOE:
Cumulative Approved:	Cost/Fee:	LOE:

Work Assignment Manager Name: Michael Papp (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-2408 FAX Number:
Project Officer Name: Jeff Curry (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4018 FAX Number: 919-541-4267
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Antonio L. Leathers (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-2312 FAX Number:

STATEMENT OF WORK

TITLE: Pb Audit Strip Development

I. PROJECT BACKGROUND

On October 15, 2008, EPA substantially strengthened the national ambient air quality standards (NAAQS) for lead. The revised standards are 10 times tighter than the previous standards and will improve health protection for at-risk groups, especially children.

EPA has revised the level of the primary (health-based) standard from 1.5 micrograms per cubic meter ($\mu g/m^3$), to 0.15 $\mu g/m^3$, measured as total suspended particles (TSP). EPA has revised the secondary (welfare-based) standard to be identical in all respects to the primary standard.

Due to the revision of the Pb NAAQS, a number of changes were made to the Ambient Air QA Program for Pb. One change made was reducing the concentration of the Pb-strip audits relative to the lowering of the NAAQS.

	Prior Regulation		Current Regulation		
Level	Pb Conc (μg/strip)	Ambient Air Conc* ($\mu g/m^3$)	Pb Conc (μg/strip)	Ambient Air Conc* ($\mu g/m^3$)	Conc Percentage of NAAQS
1	100 - 300	0.5 - 1.5	9 - 30	0.04 - 0.15	30-100%
2	600 - 1000	3.0 - 5.0	60 - 90	0.30 - 0.45	200-300%

* Equivalent ambient Pb concentration in $\mu g/m^3$ is based on sampling at 1.7 m^3/min for 24 hours on a 20.3 cmX25.4 cm (8X10 inch) glass fiber filter.

In addition due to the allowance of PM10 low volume methods EPA must also develop Teflon audit filters for use in destructive and non-destructive analysis.

II. PURPOSE

To prepare both TSP strips and Teflon filters at two concentration ranges and provide the results of each analysis. If replicate analysis results are acceptable and results between the Battelle and EPA referee labs are comparable, Battelle shall distribute these audits to Pb analyzing laboratories.

III. STATEMENT OF WORK

The Contractor shall perform the following tasks:

Note: The WAM will provide the Contractor with all filter media.

TASK 1 Work Plan and Cost Estimate

The Contractor shall meet with the Work Assignment Manager (WAM) to discuss the WA tasks and deliverables. This meeting can be via teleconference. The Contractor shall then prepare and submit a work plan and cost estimate for this WA.

TASK 2 Development and Testing of Pb Analysis Audits- Filter Strips

936, 1-inch Pb strips shall be made at two concentrations ranges for a total of 468 strips per concentration. One concentration range shall be from 30-100% and a second from 200-300% of the current NAAQS. EPA suggests strip concentrations of around **15 µg/strip** for the low concentration and around **65 µg/strip** for the higher concentration. All strips within the selected concentration ranges shall be made at the same concentration. The strips shall be packaged individually to protect strip integrity. However, each lab will require 1 year's worth of strips so 12 low concentration strips and 12 high concentration strips, for a total of 24 strips will also be bagged so that a group of 24 strips can be sent to a laboratory.

NOTE: based on orders, some labs have asked for more than multiples of 24 strips.

The Contractor shall develop the audit samples as indicated in the SOP developed for earlier work. The Contractor shall analyze the filters by ICP-MS following EQL-0510-191

The labeling of the strips will be "BAT-Filter Type-Year-Concentration-Filter Number"

1) Low Concentration Filter - "**BAT-TSP-2014-01-001**"
2) High Concentration Filter - "**BAT-TSP-2014-02-001**"

The strips will be made from lead solutions purchased from NIST and pipettes of known and tested accuracy and reliability.

Battelle shall analyze a minimum of 7 filters from each concentration in order to establish the audit strip concentrations. **Filters shall be considered acceptable if within +/- 5 percent relative standard deviation from the average of the determined values. Any filters not meeting this criteria shall be rejected and the Contractor shall be directed to remake the rejected level. All raw data and final concentrations shall be submitted to EPA.**

In addition, Battelle shall distribute six strips at each concentration to 3-4 laboratories named at a later date who will analyze them. The filter analysis for each of the labs listed above will also be considered acceptable **if within +/- 5 percent relative standard deviation from the average of the labs determined values and if the average concentration for each range is within 7% of the Contractors established concentration.**

TASK 3: Development and Testing of Pb Analysis Audits – 46.2 mm Teflon Filters

200, 46.2 mm Teflon filters shall be made at two concentrations ranges for a total of 100 filters per concentration. One concentration range shall be from 30-100% and a second from 200-300% of the current NAAQS. EPA suggests concentrations of around **2.5 µg/strip** for the low

concentration and around **8 µg/strip** for the higher concentration. All filters within the selected concentration ranges shall be made at the same concentration. The filters shall be packaged individually to protect integrity. However, each lab will require 1 years worth of filters so 12 low concentration filters and 12 high concentration filters, for a total of 24 filters will also be bagged so that a group of 24 filters can be sent to a laboratory.

	PM10 Teflon by extraction				Sampler flow L/min	Total flow 24 hr (m^3)
	Level 1		Level 2		16.67	24.0048
	30%	100%	200%	300%		
ug/m3	0.045	0.15	0.3	0.45		
ug/filter	1.08	3.60	7.20	10.80		

The Contractor shall develop the audit samples based on the SOP: *Preparation of Lead Filter Audit Filters from NIST SRM and Teflon Filters Standard Operating Procedure (SOP).* The Contractor shall analyze the filters by ICP-MS following EQL-0512-202 (or an FEM approved ICP-MS method).

NOTE: based on orders, some labs have asked for more than multiples of 24 strips.

The labeling of the strips shall be "BAT-Filter Type-Year-Concentration-Filter Number"

1) Low Concentration Filter - "**BAT-TEF-2014-01-001**"
2) High Concentration Filter - "**BAT-TEF-2014-02-001**"

The filters shall be made from lead solutions purchased from NIST and pipettes of known and tested accuracy and reliability.

Battelle shall analyze a minimum of 7 filters from each concentration in order to establish the audit concentrations. **Filters shall be considered acceptable if within +/- 5 percent relative standard deviation from the average of the determined values. Any filters not meeting this criteria shall be rejected and the Contractor shall be directed to remake the rejected level. All raw data and final concentrations shall be submitted to EPA.**

In addition, Battelle shall distribute six strips at each concentration to 3-4 laboratories named at a later date who will analyze them. The filter analysis for each of the labs listed above will also be considered acceptable **if within +/- 5 percent relative standard deviation from the average of the labs determined values and if the average concentration for each range is within 7% of the Contractors established concentration.**

Task 4 Development of Pb Analysis Audit QAPP

A level III QAPP will be required for the development of these audit standards. Since this procedure is fairly straight forward, it will compass the quality assurance steps necessary to ensure the quality of the Pb audit data. EPA will provide the contractor with the information and sections necessary for the development of this QAPP.

Task 5 Distribution of Pb Analysis Audits to Monitoring Agencies/labs

The Pb-Analysis Survey on the Battelle Website provides the order information for the agencies ordering the Pb analysis audits. Once referee analysis passes, Battelle will package and ship filters out 2-day mail to the laboratories using the EPA UPS account.

IV. DELIVERABLES

TABLE 1. List of Deliverable and Due Dates

Task	Deliverables	Due Date
1	Work Plan and Cost Estimate	In accordance with the terms of the contract.
2	Development and Testing of Pb Analysis Audits- Filter Strips	Nov 1, 2013
3	Development and Testing of Pb Analysis Audits- Teflon Filters	Nov 1, 2013
4	Analysis Audit QAPP	Oct 31, 2013
5	Distribution of Pb strips to monitoring agencies/labs	Dec 16-31, 2013

V. REPORTING REQUIREMENTS

The reporting requirements shall be in accordance with the terms and conditions in the contract.

[END]